

Attorney Docket No.: J3646(C)  
Serial No.: 10/502,021  
Filed: July 20, 2004  
Confirmation No.: 8722

### **REMARKS**

Claim 1 has been amended to identify the composition as being in the form of a shampoo that further comprises an anionic deterging surfactant; with this amendment reference to the "cosmetically acceptable material" has been deleted. See, for example, page 15, lines 12 to 14; page 16, lines 6 to 8; and page 18; line 20 to 29. Additionally claim 1 has been amended to improve the readability of the particle description. Claims 5 and 10 have been cancelled without prejudice. Claims 6 and 11 have been amended to change their dependency to claim 1. Claim 11 has been further amended to delete the reference to the hair conditioning composition and the claimed amount of hair conditioning agent; as amended the claim reads on a shampoo composition that further comprises one or more hair conditioning agents. See, for example page 21, line 30 to page 22, line 1. Claim 12 follows the format of amended claim 1 but specifies that the composition is in the form of a hair styling product and identifies the composition as comprising the gelled particles and from 0.1 to 10% by weight of one or more hair styling polymers. See for example, page 15, lines 12 to 14 and 25 to 27. Claim 18 has been amended to incorporate the description of the gelled particles from amended claim 1, and to further specify that the composition comprises a cosmetically acceptable material comprising at least one anionic deterging surfactant, silicone conditioning agent and/or hair styling polymer. Claim 21 has been amended to change its dependency to claim 18 and to read on a process which comprises forming the gelled particles in the presence of a surfactant. New claim 22 follows the format of amended claim 1 but specifies that the composition is in the form of a hair conditioning composition that further comprises one or more silicone conditioning agents. See, for example, page 20, lines 26 to 30 and page 21 line 30 to page 22, line 16. New claim 23 further specifies that the composition is a rinse-off composition.

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Entry of the foregoing amendments is respectfully requested.

Claim 1 stands rejected under 35 U.S.C. 112, second paragraph, with the Office Action maintaining that the multiple volume requirements given with respect to the recited aspect ratios renders the claim indefinite. Respectfully, this is not a situation where claims recite tiered ranges of different preference; rather the various volumes and ratios combined give a more complete description of the distribution of particles. For example, it is not inconsistent to specify that at least 50% by volume of the particles have an aspect ratio of at least 5 and a maximum width of at least 40  $\mu\text{m}$ , while at least 5% by volume of the particles have an aspect ratio of at least 50 and a maximum width of 2 $\mu\text{m}$ ; such a requirement specifies that the majority of the particles are elongated, with a percentage of the particles being highly elongated (as well as of relatively narrow width). These volume limitations taken together give a more complete description of the distribution of the particles than does a single volume limitation alone. Accordingly, this rejection is respectfully traversed and reconsideration thereof respectfully requested.

Pursuant to the referenced Office Action, claims 1, 4-8, 10-15 and 18-21 were rejected under 35 U.S.C. 103(a) over Brown et al. (EP 0355908) and Tsuar (US 5,726,138). These rejections are respectfully traversed.

Pursuant to the subject invention it was found that the particle morphology can significantly affect the substantivity of gelled particles to hair. Human scalp hair is a collection of fibers that, depending upon the coarseness or the fineness thereof, are commonly reported to range in diameter from about 60 microns or less ( $\mu\text{m}$ ) to about 90 microns or more. See for example, US 5,461,925. The subject inventors found that gelled particles having the morphology described by the subject claims (which

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Serial No.: 10/502,021  
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particles comprise water and a gelling polymer and characterized, in part, in that at least 20% by volume of the particles have an aspect ratio of at least 10 and a maximum width of 20  $\mu\text{m}$ , and at least 5% by volume of the particles have an aspect ratio of at least 50 and a maximum width of 2 $\mu\text{m}$ ) are able to "entangle" between the individual hair fibers, providing gels with improved substantivity to the hair, thereby providing a vehicle for improved deposition of hair benefit agents contained therein. See, for example, Example 5, comparing the substantivity to hair of gelled particles satisfying the morphology requirements of the subject invention and gelled particles having a spherical morphology, such particles having been applied from a shampoo composition. Figure 3 of the subject application is a micrograph that shows the fiber-like particles of the subject invention being deposited on the hair fibers; in contrast, the spherical particles were reported to wash away. Thus, not only are the fibers substantive to hair, such substantivity was found to survive rinsing, which is particularly desirable in rinse-off applications such as shampoos and rinse-off conditioners.

Submitted with this response is a duplicate original of Figures 1 and 2 of Brown et al. As is more clearly seen in the attached micrographs, the microgels shown therein (shear gels) do not meet the claim description of particles having the morphology requirements of the subject invention, (e.g., at least 5% by volume of highly elongated fiber-like particles having an aspect ratio of at least 50 and a maximum width of 2 $\mu\text{m}$ ). Moreover, Brown et al. is directed to the use of gelling polysaccharides as thickening agents. While Brown et al. discloses how the reversible gels therein described improve the properties of the compositions incorporating same, there is nothing in the citation that in any way links gel morphology to deposition properties on hair fiber.

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Tsaur et al. et al. is directed to hydrogels described as having a particle size in the range of from greater than 25 micrometers, preferably larger than 100 micrometers, more preferably greater than 200 micrometers up to about several centimetres. The hydrogels disclosed by Tsaur et al. are required to:

...be soft enough and capable of disintegrating smoothly when the composition is applied to and rubbed onto the intended substrate, such as skin, without causing any undesirable feeling of foreign matter or grittiness, due to the breaking or due to the components of the hydrogel particles. (See, for example, column 4 lines 19 to 24.)

In use, the network structure of the Tsaur et al. hydrogels break, releasing a benefit agent contained therein. Tsaur et al. discloses that the entrapment of the benefit agent within the hydrogel carrier enhances deposition of the agent on the intended substrate, e.g., skin. The citation discloses that the hydrogel domains may be spherical, noodle shaped or irregular in shape, with the hydrogel having a least one dimension that is larger than 25  $\mu\text{m}$  and "preferably larger than 100  $\mu\text{m}$  to allow optimal transfer of the hydrogel to the substrate during the rubbing process." See, for example, column 4 lines 35 to 44 and 59 to 63. Tsaur et al. exemplifies compositions that contain irregular shaped hydrogel domains as well as domains that in Example 3 are reported to consist of "noodle shaped particles". The particles of Example 3 are reported to be approximately 1000  $\mu\text{m}$  in diameter. See column 15, lines 63 to 67. Respectfully, particles of such a diameter are significantly greater than the typical diameter of individual hair fibers and would not be expected to have the same ability to entangle between individual hair fibers as particles having the morphology requirements of the subject invention. While Tsaur et al. discloses that its hydrogels promote substantivity to a substrate such as skin (a continuous surface) its gel forms cover a broad range of morphologies without providing one skilled in the art with any disclosure of the instant gel configuration as a means of promoting gel substantivity to hair. If anything, Tsaur

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et al. teaches toward the use of gel particles that are significantly larger than those of the subject invention.

It is respectfully submitted that neither Brown et al. nor Tsaur et al. discloses or suggests the compositions or processes of the subject claims as hereby amended.

It is respectfully submitted that the subject amendments, which incorporate into the independent claims the requirements of components such as anionic deterging surfactant, silicone conditioning agent, and/or styling polymer moot the double patenting rejection over US 7,169,427 (Frith et al.) in view of Brown et al., and reconsideration thereof is respectfully requested.

In view of the foregoing comments and remarks, reconsideration and allowance of the subject claims, as hereby amended, is respectfully requested. If a telephone conversation would be of assistance in advancing the prosecution of the present application, applicants' undersigned attorney invites the Examiner to telephone at the number provided.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read 'Karen E. Klumas', with a horizontal line drawn underneath the signature.

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